



Dworshak Fisheries Complex

Monthly Activity Report



July Highlights

Dworshak

SST BY16 Systems -
2,043,119

SST BY16 Nursery-
385,288

SCS BY15 - 2,336,487

COS BY 15 - 345,226

Kooskia

BY 15 Chinook - 693,630

SCS Trap Count -
516 females
494 males

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U.S. Fish & Wildlife Service, Region 1

Managers Message - Steve Rodgers

Volume 5 Issue 10



Credit: Olson, FWS

It Takes a Team!

Which came first, the chicken or the egg? In fisheries management, there's a similar question: who is more important, the fish culturist or the evaluation biologist? The answer is that neither is more important than the other. The reality is fish production and evaluations are two parts of the same puzzle.

It all starts with the fish culturists, our best experts when it comes to the fish on station. They observe the fish every day, from adults to eggs to fry to smolts. They care for them like proud parents, as a farmer to his cows. Fish culture is an art, and our fish culturists are the artists. Evaluation biologists recognize this special relationship, and are wise to rely on that expertise when designing and implementing studies that lead to improvements.

Equally important, seasoned animal caretakers recognize that our evaluation biologists are a powerful tool in building a quality hatchery program. Why? Because our biologists help us make the best smolts we can, fish designed to succeed in the natural world beyond the safety of the hatchery. They track our fish's performance, and their interactions with natural populations, and

other metrics that lead to success or failure. Most importantly, they challenge the status quo and help us adapt to change. You can probably think of a hatchery that closed because its programs didn't evolve to meet dynamic change.

The evaluation biologists at a hatchery I worked at recommended some changes in how we trapped and spawned Chinook; to ensure we kept stray rate incorporation in the broodstock below 5%, and to infuse natural genetics into our hatchery program while maintaining adequate natural fish production in the stream. When the Hatchery Scientific Review Group came along, they didn't have any meaningful suggestions for the program. Our evaluation biologists were ahead of the curve, and had already implemented changes that helped the hatchery evolve.

If an evaluation biologist asks you (the fish culturist) to enter obscure data into a spreadsheet on the spawning room floor, or check for PIT tags on a nasty carcass, or do some other task which doesn't appear to relate to your fish, take it seriously and do your best. He or she needs your help to accurately evaluate our program and help us succeed. And the next time a fish culturist asks you (the biologist) to "stay off the pond wall" or "don't crowd the fish that tight", listen to what they say. They know our fish and how best to treat them.

Show me a hatchery without meaningful evaluation and I'll show you a closed hatchery. Show me a group of evaluation biologists without quality fish culturists, and I'll still show you a closed hatchery. The culturist and evaluation biologist need each other, like fish need water and complex managers need toner cartridge.

Dworshak Hatchery Production - Izbicki, Sommer, Bisbee

Dworshak Stock - Spring Chinook Salmon (SCS)

Brood Year 2015 (BY15)

By the end of the month there were 2,336,487 BY 15 SCS fry in 16 raceways. Fry averaged 311FPP (fish per pound). Mortality averaged 0.8%. Mortality for the month has remained higher than the hatchery staff would like to see. The Fish Health has looked at the fish and their reports still show zero bacteria, no viruses, and overall good health. Further sampling will be conducted in August. The hatchery crew is sweeping all 16 ponds from stem to stern on Mondays and Thursdays, and daily scrubbing screens (head and tail). Fish density is higher than the 0.35 allowable density index, but the fish size is too small to pull the third screen to give them more room. Fish marking will begin next month, beginning 8/15 by NPT staff and 9/6 by USFWS staff, and we will extend/split the fish then. There are four distinct PBT groups for BY 15 fry: Dworshak smolt production (1.7 M end of month), NPTHC Parr (205K end of month), NPTHC Lolo (151K end of month), and Selway Parr (296K end of month).

Coho Salmon (COS)

Brood Year 2015 (BY 15)

At the end of July there were 345,226 Umatilla, Kalama, Irrigon, and Clearwater stock Coho fry in 37 tanks set into modified Burrow's ponds in System 3. Fry averaged 583 fpp and mortality averaged 18.0%.

Dworshak Stock- Summer Steelhead (SST)

Brood Year 2016 (BY 16)

Inventory and marking BY 16 SST outside to System 1 Burrow's Ponds (BPs) continued through July with takes 8 and 9 being marked with adipose clips and Coded wire tags. Marking will continue through early August.

Once fry are marked and moved outside they remain on reservoir water until they are a minimum of 60 FPP. Takes 3, 4, and 5 reached that mark in July and were split into Burrow's ponds in System 2, where they will remain until release next spring.

At the end of July there were 2,043,119 fry from takes 1-9 in System 1, 2, & 3 averaging 49 fpp; 385,288 fry in the Nursery from takes 9 & 10 averaging 165 fpp. Mortality in the Systems was 0.10%, and was 0.14% in the nursery.



Credit: Olson, FWS

The hatchery crew is sweeping all 16 ponds from stem to stern on Mondays and Thursdays, and daily scrubbing screens (head and tail).



Credit: Olson, FWS

Dworshak Hatchery Production

(Continued from page 2)

SUMMARY

Table 1. Total Production - Fish on Station (7/31/16).

SP	BY	Location	Number	Wt (lbs)	FPP	L in	L mm
SCS BY 15	15	Raceways	2,336,487	7,524	311	2.2	56
COS BY 15	15	System III	345,226	643	537	1.7	44
SST BY 16	16	Nursery	385,288	2,334	165	2.7	69
SST BY 16	16	Systems	2,043,119	38,052	54	3.8	97
Total Fish/Fry on Station EOM			5,110,120	48,553			

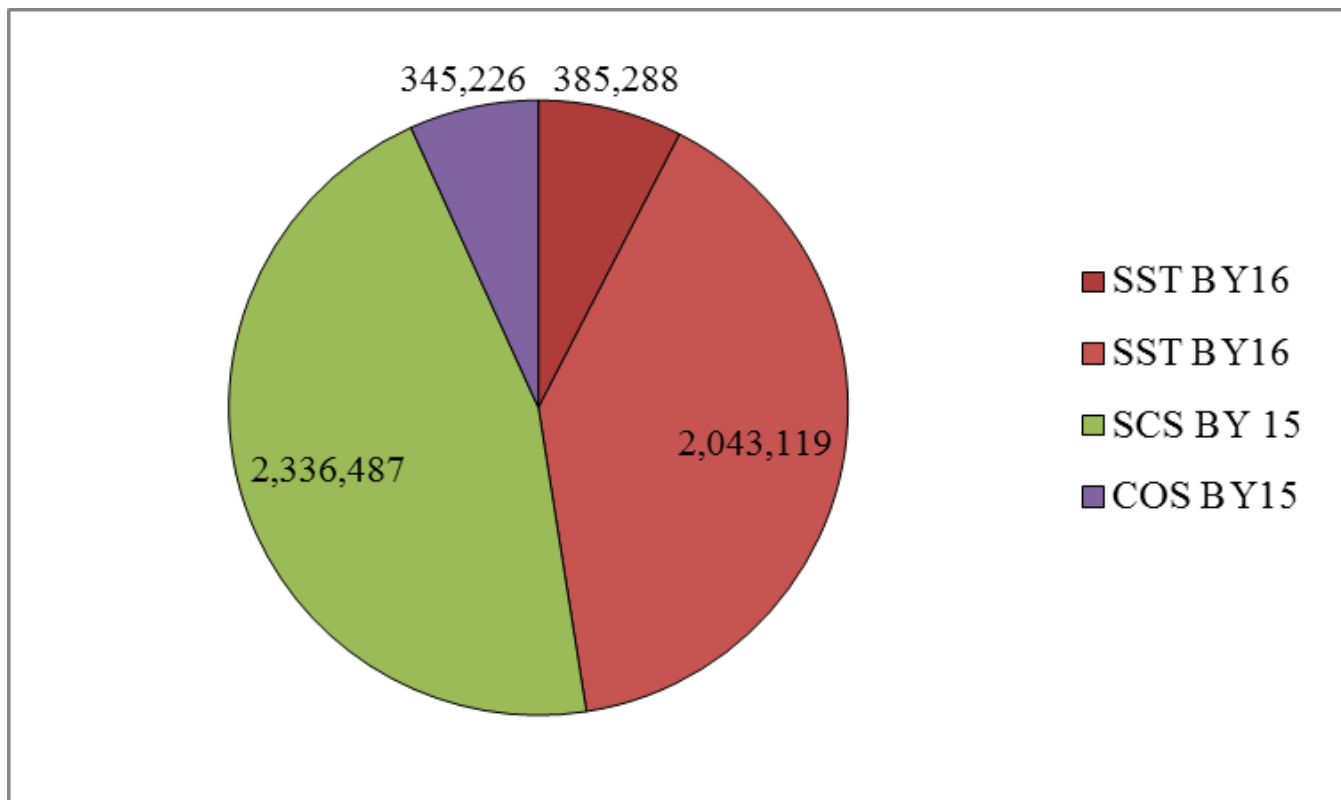


Figure 1. July 31, 2016 Total Fish/Eggs on Station.



Credit: Hills, KNFH

The tribal interns finished cleaning and disinfecting the incubation trays at Kooskia NFH.



Credit: Olson, FWS

Students attending the PACE summer camp learned anatomy of adult salmon and steelhead.



Credit: Olson, FWS

Volunteer Karen Loranger shows a 4-H group the stages of fish development during the 6th grade forestry tour.

Dworshak NFH Meetings, Training and Conferences - Drobish

On July 8th, Angela Feldmann, Scott Koehler, Jeremy Sommer, Mark Drobish and Chis Starr (LSRCP) met to discuss and look at completed Capital Improvement Projects (i.e. Grip strut for raceways, flow meters for "A and B Bank raceways" and the installation of mud valves. The group also discussed baffles, roof structure, vehicle, Low Head Oxygenation system and bulk liquid oxygen tank and location along with the Lease Agreement necessary for approval for this project. The group also discussed NPDES issues relative to the off-line settling basin (i.e. meeting the 90% removal rate). Julie Collins was conferenced in for part of the discussion and Lease Agreement needs.

On July 12th, Jack Woods, Liberation Coordinator, Oregon Department of Fish and Wildlife visited the Dworshak Fish Hatchery to check out the Corps' Fish Distribution Trailers as a potential option for transporting Coho.

On July 18th, Jed Janek, Environmental Protection Specialist, collected water samples during our formalin treatments for the adult holding ponds (broodstock). This is part of the Northwest Aquaculture Facility Formaldehyde Study involving several hatcheries around the northwest. The focus is to collect data and look at formalin levels reaching receiving waters. Results are pending.

On July 26th, Steve Rodgers attended the Dworshak Hatchery Rehabilitation Coordination Meeting. The focus of this meeting is to address questions from the Corps' Division Office relative to the Dworshak Fish Hatchery to determine the path forward.

DNFH Maintenance and Operations Activity Report - Koehler

- New tables were purchased for the production break room. Maint. staff made a few improvements to the tables to better meet productions needs.
- The Bio office space, located next to the spawning floor was gutted, painted and had new flooring installed.
- Valves were replaced or repaired in the incubation room.
- Gate in A bank raceway was repaired per productions request.
- Digesters were pressure washed in preparation of painting.
- Work continues in the unoccupied quarters, making repairs and cleaning up the yards.

Maintenance has completed all 46 Preventative Maintenance work orders for the month of July. Also completed 8 requests by production staff.

Idaho Fish and Wildlife Conservation Office - Peery (Acting Project Leader)

Dworshak Complex Monitoring and Evaluation Team

Participated in the weekly Snake Basin Chinook Salmon Coordination calls. IDFG shared results of preliminary analysis that estimated return of Dworshak Chinook to Lower Granite is 5,931. Our forecasted return was 5,738. Kooskia PBT estimated return was 1,224. Forecast was 5,550. Obviously we need a little more work on the Kooskia forecast model.

Assisted with sorting Chinook salmon at Kooskia NFH and entered data to FINS

Working on 2016 Annual and rearing density data analyses and reports

Met with NPT, WDFW and UI graduate student to coordinate steelhead radiotelemetry evaluation in the Clearwater River. We established receiver site locations and tag allocations to the different steelhead release groups.

Worked on paperwork to HR to hire fish technician through VRA.

Griff attending coldwater culture course

Confirmed final property inventory and safety audits were submitted to RO

Conducted sorts for BY2016 Chinook salmon broodstock.

Participated in discussions with DWR production crew, NPT and IDFG on how to supply salmon broodstock from fish collected at Dworshak NFH.

Participated in the Dworshak Complex management meeting

Measured coded-wire tag retentions for BY2016 steelhead prior to be moved out of nursery.

Supplied radio transmitters to NPT to be used in steelhead escapement evaluation.

Reviewed manuscript for NAJFM.

Worked on EOY budget projections.

Participated in complex safety meeting. Griff is preparing safety presentation.

Discussed mark plan for Hagerman RAS evaluation with IDFG

Compiled on-station performance data from the Density Study in preparation for final statistical analysis

Completed EEO and diversity training

Participated in meeting to discuss Hagerman NFH PRAS evaluation in Boise

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Idaho Fish and Wildlife Conservation Office

Aquatic Conservation Team

(Continued from page 5)



Credit: Brostrom, FWS

Participated in Pollinator Week activities at the Lemhi Farmers Market. Along with partner Salmon Valley Stewardship, we distributed milkweed plants, talked to interested folks about the importance of pollinators, displayed posters and introduced the Pollinator Pathways Project which will bring pollinator education into the schools and produce art murals which will be painted by kids and installed in 3 locations in Lemhi County

Called in to Western Lamprey Team calls

Worked on Leadore School Garden PFW Landowner Agreement

Prepared draft of the Snake River Mainstem Pacific Lamprey Regional Implementation Plan. Sent to Howard and Christina for review.

Worked on the 2015 Progress Report for Climate Change Monitoring on National Wildlife Refuges.

Coordinated with Idaho Panhandle National Forest Staff for sampling redband habitat this summer.

Wrote PFW agreement with South Lemhi School District #292 for their school garden

Prepared materials to present South Lemhi School Garden project to Lemhi Soil and Water Conservation District

Followed up to get parental permission for photos taken at Pollinator Week activities - still unresolved

Dissecting statoliths from lamprey ammocoetes for Hotspots project.

Gathered and prepared sampling gear for the first vertebrate sampling trip on Myrtle Creek, Kootenai Refuge in 2016.

Attended Lemhi Soil and Water Conservation District meeting to present Leadore School Garden Project and obtain their signature. Finalized package and submitted for FWS signature.

Meeting for Pollinator Pathway Project

Reviewed Continental Divide Trail Gateway Community Application for Salmon Valley Stewardship

Started Project Accomplishments for FIS and sent email out to partners for their project status.

Reviewing Tribal Lamprey Management Plan

Conducted first vertebrate sampling trip on Myrtle Creek, Kootenai Refuge.

Preparing equipment for Mt whitefish project

Worked on FONS FIS Accomplishment reporting

Upper Salmon Basin Tech Team field tour to the East Fork Salmon River. Reviewed broodstock management, habitat projects

Prepared for and participated in the Salmon School Garden's Summer Kids Program. Topic was honeybees and pollinators.

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Credit: Brostrom, FWS

Highlights from
The Salmon School
Garden's Summer
Kid's Program.



Credit: Brostrom, FWS

Aquatic Conservation Team

(Continued from page 6)

Coordinated with cooperators on final financial reports, FIS reporting and permitting issues for new projects.

Attended Lemhi Regional Land Trust Annual Fundraiser

Fall Chinook Salmon Research Team

Connor worked on the section on adult immigration and behavior for the monograph.

Connor revised a manuscript on the use of unmanned aircraft to count redds that received a “publish with minor revisions” recommendation from the Canadian open access journal FACETS. The revision was sent to coauthors at Idaho Power Company and the University of Idaho for additional input.

Mullins maintained and stored field gear and began to compile the 2016 seining database.

Connor worked on a model to estimate energy expenditure of Snake River fall Chinook salmon adults during immigration and spawning.

Mullins assisted during field work in northern Idaho.

Idaho Fish Health Center - Blair

July 2016

Dworshak NFH

Steelhead juveniles: On July 25, monitoring exams of system 1 and 2 for Dworshak steelhead were performed. System 1 steelhead looked healthy except for low levels of Gas Bubble Disease seen in the gills of the fish. System 2 had higher levels of Gas Bubble Disease, also seen in the gills.

All juvenile steelhead have been moved outside of the nursery except Take 10 juveniles. These fish will remain in the nursery until September to try and get them to size at release time.

Spring Chinook juveniles: Diagnostic exams were conducted on the 7th and 8th of July along with a monthly monitoring exam conducted on July 12th. Mortalities were slightly elevated in raceways A3-A9. Fish from the general population appeared healthy; moribund fish collected had clinical signs of hemorrhaging around vent and abdomen, coinciding with issues of fully buttoning up around vent. Bacterial cultures collected from general population fish were clear, whereas cultures from moribund fish grew moderate to high levels of environmental bacteria (*Pseudomonas fluorescens* and other *Pseudomonas* spp.) – likely indicating secondary bacterial infections connected with buttoning up issues. Recommendations were to continue to keep tanks clean and monitor for mortality increases.

Spring Chinook adults: Half of all Dworshak spring Chinook female adults on station as of July 27 were injected with Draxxin for Bacterial Kidney Disease (*Renibacterium salmoninarum*) as a part of an efficacy study for the treatment. Female adults will continue to be injected as they return to the hatchery until spawning begins.

Coho juveniles: Coho juveniles were treated for bacterial gill disease. The crew increased their cleaning schedule and adjusted their feeding rations until the fish started eating better. Majority of the mortality now is just pinheads.

Kooskia NFH

Spring Chinook juveniles: Kooskia spring Chinook were examined on July 20 with a routine monitoring visit. Low levels of debris/algae were seen on the gills. Recommendations were to resume vacuuming as planned when cleaning to reduce accumulation of debris in the ponds since marking is now completed.

Kooskia National Fish Hatchery - Hills



Credit: Hills, KNFH

The trap was operated Monday through Friday in July with 348 Chinook being removed from the trap.



Credit: Hills, KNFH

A fire broke out 4 miles above the hatchery up Clear Creek.



Credit: Hills, KNFH

The Kooskia hatchery was used as a camp and staging area for about 150 firefighters.

This activity report is implemented by the Tribal Fish Hatchery Manager, Kent Hills. All information in this report was collected and or performed by the hatchery staff during the preceding month.

Under SRBA and the Clearwater Annual Operating Plan, the Tribe, Service and Idaho Fish & Game have agreed to implement other fish production actions related to KNFH mitigation. Reports will include additional information about other species reared, processed and released in relation to KNFH operations.

Kooskia Chinook Brood Year 2015

There are 693,630 fry on station; we have had mortality this month of 2,721 fish. The increase in mortality was caused by tagging personnel overcrowding pond #4 resulting in a mortality of 1,800 fish. They are on well water at 51° F. The fish consumed 3,221.5 pounds of feed. The average size is 3.32 inches (84 mm) long, weight gain was 3,391 pounds.

Kooskia Adult Trap Operations:

The trap was operated Monday through Friday in July with 348 Chinook being removed from the trap. Broodstock transported to Dworshak included 36 hatchery males and 47 hatchery females. Broodstock transported to Clearwater Hatchery included 99 hatchery males and 131 hatchery females. There were 10 wild males, 1 wild jack and 7 wild females released into Clear Creek above the weir. Two hatchery jacks with CWT's were killed for the CWT's and taken to Kamiah Food Bank. Eleven hatchery jacks were transported to the Kamiah Boat Ramp and released into the Clearwater River. Trap mortalities included 3 hatchery females and 1 hatchery male. The trap was closed for the season on the 28th due to high water temperatures. We currently have 516 females and 494 males in our holding pond at Dworshak.

Maintenance & Operations:

Jul 06: 144 Chinook were removed from the trap. 9 hatchery males and 14 hatchery females were transported to Dworshak for broodstock. A total of 3 hatchery jacks were transported to Kamiah boat ramp and released into the Clearwater River. A total of 61 hatchery males and 48 hatchery females were transported to Clearwater Fish Hatchery for broodstock. A total of 4 wild males, 4 wild females and 1 wild jack were released into Clear Creek above the weir..

Jul 08: Taggers arrived to clip BY15.

Jul 11: Staff repaired the crowders for the taggers.

Jul 12: Tagging personnel crowded the fish in Burrows pond 4 too tight resulting in a mortality of about 1,800 fish.

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Kooskia NFH - Hills

(Continued from page 8)

Maintenance & Operations (continued):

Jul 14: Removed 75 Chinook from the trap; 15 hatchery males and 11 hatchery females were transported to Dworshak for broodstock. A total of 14 hatchery males and 26 hatchery females were transported to Clearwater Hatchery for broodstock. A total of 3 wild males and 1 wild female were released into Clear Creek above the weir for natural spawning. A total of 5 hatchery jacks were released into the Clearwater River at the Kamiah boat ramp.

Jul 15: The taggers completed clipping BY15, leaving 60,000 unclipped fish in Burrows pond 6. Pond inventory is as follows: **BP1** 110,171, all fish in this pond have CWT's; **BP2** 116,544; **BP3** 116,145; **BP4** 116,119; **BP5** 116,173; **BP6** 121,199 (60,000 are unclipped as per SRBA)

After tagging, there was a count correction of 9,810 less fish than last month. 43,790 unclipped fry were released into Clear Creek above the weir due to the lack of rearing space at the hatchery.

Jul 21: 107 Chinook were removed from the trap. A total of 9 hatchery males and 18 hatchery females were transported to Dworshak for broodstock. A total of 21 hatchery males and 50 hatchery females were transported to Clearwater Hatchery for broodstock. A total of 3 hatchery jacks were released into the Clearwater River at the Kamiah boat ramp, 2 hatchery jacks with CWT's were taken to the Kamiah Food Bank after the snouts were removed. A total of 2 wild males and 2 wild females were released into Clear Creek above the weir for natural spawning.

Caleb and Fletcher spent half a day at Fish Health in training.

Jul 22: Gerry went to Corvallis, Montana and picked up a new reel sprinkler.

Jul 25: Gerry installed the new sprinkler.

Jul 25: Chief of Staff for Senator Risch arrived at the hatchery for a tour.

Jul 27: Staff began changing screens in the Burrows ponds.

Jul 28: A total of 22 Chinook were removed from the trap, 3 hatchery males and 4 hatchery females were transported to Dworshak for broodstock. A total of 3 hatchery males and 7 hatchery females were transported to Clearwater Hatchery for broodstock. A total of 1 wild male was released into Clear Creek for natural spawning. A total of 3 hatchery females and 1 hatchery male were trap mortality. The trap was closed for the season due to high water temperatures.

Jul 28: A fire broke out 4 miles above the hatchery in Clear Creek, the cause reportedly was a cigarette thrown from a vehicle. The hatchery was used as a camp and staging area for about 150 firefighters.

Jul: 31: The tagging trailer was taken by England Trucking..

Kooskia NFH Training and conferences:

Kenny attended Fins training at Dworshak on the 28th.

Caleb, Carter and Fletcher attended Fish Health Training on the 21st at Dworshak.

Hatchery Manager attended a Coho tank meeting in Lapwai.

Hatchery Manager attended the Production Leaders meeting at Dworshak.

Hatchery Manager attended the weekly Chinook Coordination call every Tuesday.

Hatchery Manager attended the Production Leaders conference call meeting for the Fish and Wildlife.

Hatchery Manager attended the 401 k sub-committee meeting in Lapwai.

Information and Education

Dworshak - Jill Olson

Facebook: Reach - 14.8K ; Engagements - 1,022 **Website:** Page Loads - 33; Unique - 26; First Time - 22; Returning - 4

Visitors: 222 visitors signed in from 25 states **Tours:** We guided 1 tour for 29 adults on an RV tour originating in Willmar, Minnesota.

Outreach: We were involved in three outreach events which were co-sponsored by the Clearwater County 4-H, the U.S. Forest Service in Kamiah, ID, and the Nez Perce Tribe's PACE program. These events provided us with the opportunity to reach 120 kids and 27 adults.

Volunteer Hours: Five volunteers put in 69 hours during the month of July. Most activities were for Production and Outreach.

Kooskia - Kent Hills

Visitors: There were 455 visitors to the hatchery during this month; this figure is compiled by staff. We have been visited by a lot of tourists with the adult Chinook in the trap for viewing. We have also had about 150 firefighters bivouacking at the hatchery.



Credit: Olson, FWS

Let's Go Outside!

Experience Nature

http://www.fws.gov/pacific/experience_nature/

Dworshak Fisheries Complex Management:

Steve Rodgers, Dworshak Fisheries Complex Manager

Mark Drobish, Dworshak NFH Manager

Adam Izbicki (FWS) & Jeremy Sommer (NPT)
Dworshak NFH Assistant Hatchery Managers

Mike Tuell, SRBA Coordinator

Scott Koehler, Dworshak NFH Maintenance Supervisor

Vacant, Project Leader, Idaho Fish and Wildlife
Conservation Office

Mike Faler, Aquatic Conservation Lead

Dr. William Conner, Fall Chinook Research Lead

Dr. Chris Peery, Fish Production M&E Lead

Kent Hills, Kooskia NFH Manager

Gerry Fogelman, Kooskia NFH Maintenance Supervisor

Staff List

Dworshak NFH Production: Angela Feldmann, Tom Tighe, Rob Bohn, Wayne Hamilton, Mike Bisbee, Tui Moliga, Steve Coomer, Carter Lopez, Zach Broncheau, Jayden Hudson, Steve Jeffers, Jayson Thompson, Aidan Frye

Administration: Heather Leopard- Administrative Officer, Brian Devin- Budget Technician

Dworshak NFH Maintenance:

Terry Weeks, Rick King, Rob Kellar, James Oatman, James Paddelty, Melissa Wright

Idaho Fish and Wildlife Conservation Office:

Ray Jones, Aaron Garcia, Carrie Bretz, Frank Mullins, Jody Brostrom, Chris Griffith

Complex Information and Education: Jill Olson

Kooskia NFH: Kenny Simpson,